PAD/PIC 2-61
10 January 1961

Chairman, Technical Development Board

Chief, PAD

The FMA PI Cell

1. Although aspects of the PI Cell as presented in the rough draft of FMA's final report, as well as in the mock-up demonstration, appear to hold some promise, the general overall feeling of the PI shop can best be described as one of disappointment. Perhaps this can be explained by the frequent PI comment that "details were lacking" and that there was "too much mock-up and not enough working equipment."

2. First let me cover those aspects that appear to hold some promise.

A. Aerial Image Viewer:
The need for a top quality viewer is foremost in the PI's mind. The most important item in a PI Cell is the viewing equipment, yet this was mocked up to the extend that judgement could not be made as to the quality of image or the efficiency of operations.

B. Polaroid Projection Viewer:
Group viewing is extremely important - yet the image detail of the polaroid projection left much to be desired.

3. It is our opinion that neither the rough final report nor the demonstration showed a sufficient understanding of the complex problems of a PI Cell to place us in a "go" or "no go" position. We are DEFINITELY NOT READY TO LAUNCH INTO PROTOTYPE DEVELOPMENT.

4. The aspects of the PI Cell causing questions to be raised, and even consternation, are as follows:

A. Oral reporting by the PI - considering present and past experience in volume reporting on a crash basis the concept of oral reporting shows a serious lack of understanding of the reporting problem including cross-checking, rechecking, editing, etc.

B. Projection of Support Material including comparative photography, maps, collateral, etc.

a. First of all the arrangement of the Cell was most unrealistic, both in regard to distance separating the aerial image viewer from the comparative photo, collateral viewer, and map viewer, as well as the 90° angle separation.

b. Second, the volume of collateral, maps, and comparative photography and the absolute requirement to view such material in multiple copies and for more than scan time on a screen, raises a serious question as to the utility of such a system. Most personnel seem to doubt if the results would be worth the effort.

C. Automatic Readout of Coordinates
The time element in determining in advance the corner coordinates of each frame is, to say the least, a challenging problem.

D. "Cursors" or Pointers to automatically locate identical points on new and old photography.

5. Facts on which there seems to be lack of understanding:

A. The requirement by the PI for HARD COPY -
Actual paper maps
Collateral in hand, not 1 page at a time on a viewing screen.
Reporting his findings in writing for reference back to, cross-checking, correcting, and submitting for edit, etc.
Volume of material used, e.g. the need to view four or more maps simultaneously.
Capability of orienting comparative photography and maps at any angle with a compete swing of 360°.

B. The fact that an overwhelming proportion of man hours is still, and will continue to be, devoted to detailed analysis.

C. The fact that the most pressing need is for the development of viewing equipment. There appears to be more study devoted to auxiliary services.

6. Recommendations:

A. That an adequate viewing system be developed first with prototype viewers placed in the PI shop for practical usage tests and evaluation.

B. That auxiliary services - maps, collateral, comparative photography etc., be turned over to the newly created PIC Data Processing Committee for study and development.

C. That, in addition to the one or two-man PI Viewers, a group viewer be given sufficient emphasis to assume it's timely development.

D. That a well qualified PI from PAD, who is intimately knowledgeable of the complex problems encountered by the PI on an OXX, OBX, etc., be assigned as an assistant project monitor for the PF Cell project. This man should accompany the project monitor on trips to contractors and participate in meetings, discussions, modification plans, etc.

E. That a meeting be set up to bring together PI's and P&A personnel for a frank, detailed discussion of PI Cell problems rather than the once-over-lightly mock-up demonstration.

F. That a careful and considerate compromise should be made between simplicity and sophistication with emphasis toward simplification that would promote utilization and assure a minimum amount of break-down time.

G. And last, but not least, give the Human Factors personnel more of a chance to apply their know-how.

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